FISHER m-SCOPE®

1212-X

One Knob Metal Detector

Operating Manual

FISHER RESEARCH LABORATORY

CONTENTS

About Your 1225-X ..... pg. 1
Setting Up ..... pg. 2
Control Functions ..... pg. 4
Discrimination Points ..... pg. 5
Searching ..... pg. 7
Pinpointing ..... pg. 9
Recovery Tools ..... pg. 11
Target Recovery ..... pg. 11
Operating Tips ..... pg. 12
False Signals ..... pg. 13
Battery Replacement ..... pg. 14
Maintenance ..... pg. 15
Treasure Hunter's Code Of Ethics ..... pg. 15
Where To Use Your Metal Detector In The U.S. ..... pg. 16
Specifications ..... pg. 17

ABOUT YOUR DETECTOR

Your 1212-X is more proof from Fisher Research Laboratory that a good metal detector doesn't have to be complicated and expensive. No frills but a lot of performance features that really count: automatic VLF- ground rejection, automatic tuning, variable trash rejection, headphone jack, built-in speaker and a deep-seeking lightweight 8 inch search coil. Best of all it does what a metal detector is supposed to do—it ignores ground minerals and trash as it detects valuable buried targets.

One knob operation. Just pick it up, set your trash rejection level and start searching. No tuning, no meter, no gimmicks.

Performance. If you've tested other detectors in this price range, you're in for a pleasant surprise. In fact you may find that your 1212-X goes deeper and ignores trash better than some detectors costing much more.

State of the art. Engineered by the world's oldest and proudest name in metal detectors. Patented double derivative electronics provide up to 30 hours of silent, no drift operation on a single 9 volt transistor battery.

Read this instruction manual from cover to cover and treat your 1212-X as you would any high quality precision instrument. Drop us a line if you have any questions, comments, or exciting 1212-X stories. In the meantime . . .

Happy Hunting!
Fisher Research Laboratory

SETTING UP

The 1212-X comes to you just about ready to use. The only adjustment required is the angle of the stem. Take a look at page 4 and familiarize yourself with the parts of the 1212-X before proceeding.

1. Unpack your new 1212-X carefully. Save the carton and inserts—they may come in handy for future storage or shipment.

2. Note that the search coil cable is permanently attached to the control housing. Be careful not to put any undue strain on it.

3. Take a look inside the locknut on the upper stem. Note the yellow locking pad on the left-hand side and loosen the locknut by rotating it fully counterclockwise.

4. Slip the lower stem into the upper stem, tighten and loosen the fit by turning the locknut.

5. Adjust the stem length (using the locknut) and the coil angle (using the nylon wing nut) so that the search coil rests flat on the ground about 6 inches in front of, and slightly to the right of, your right foot (to the left of your left foot for left handers.) Your arm should be straight and relaxed with your grip held loosely.

REMEMBER: THE LONGER THE SHAFT, THE MORE YOU WILL HAVE TO BEND YOUR ELBOW AND THE SOONER YOUR ARM WILL GET TIRED. THE 1212-X IS BALANCED FOR COMFORTABLE SEARCHING IN A TIGHT SEMICIRCLE AROUND THE FRONT OF THE OPERATOR.

6. With the stem length properly adjusted, remove the search coil from the lower stem (by removing the Delrin bolt and wing nut). Wind the cable loosely around the upper and lower stems and reinstall the search coil.

CAUTION: *MAKE SURE THE CABLE IS NOT PULLED TIGHT AT THE CONTROL HOUSING AND THAT YOU HAVE ENOUGH SLACK AT THE SEARCH COIL TO ADJUST IT TO ANY ANGLE.*

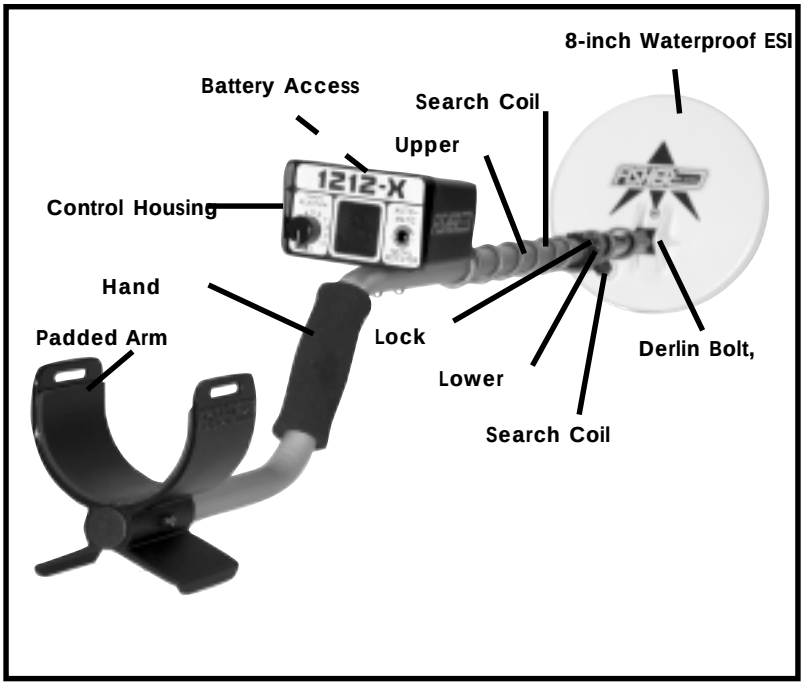

Figure 1. Fisher M-Scope 1212-X

Figure 2. Search Position

7. With the shaft length and coil angle properly adjusted, you should be able to move into your "search" position (as shown on page 5) by leaning forward very slightly and raising your arm (still straight) until the search coil is about 2 inches above the ground and 12 inches in front of your foot. The search coil should be parallel to the ground and may have to be slightly readjusted at this point.

CONTROL FUNCTIONS

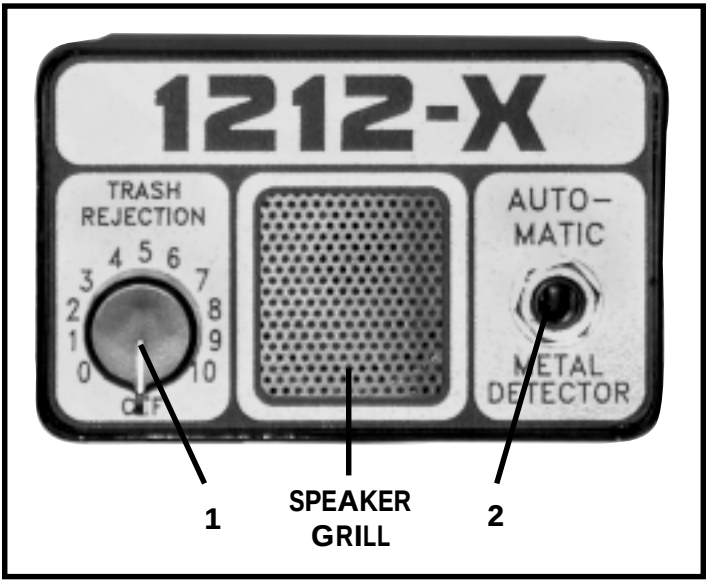

Figure 3. Control Panel. One knob does it all!

1. ON/OFF - TRASH REJECTION CONTROL: Power is Turned off at the full counter clockwise "OFF" position. All metals are detected when turned on to zreo. Most small pieces of metal trash are rejected at the maximum level of ten. Most ground minerals are ignored at all settings.
2. STEREO HEADPHONE JACK: Located on the right side ofthe control panel, this jack accepts most stereo and mono headphones with 1/4" diameter plugs. When used, the speaker is automaticallydisconnected. A headphone can be very helpful when hunting in noisy areas or detecting faint signal on small, deep targets. CAUTION: SInce the 1212-X has a fixed volume setting (loud), always use headphones with individual volume controls adjusted to a comfortable level. Also, If you use a stereo headphone, make sure the stereo/mono switch is in the "stereo" position.

DISCRIMINATION POINTS

By adjusting the TRASH REJECTION control you will be able to reject (or "discriminate") small pieces of metallic trash and ground minerals while detecting valuable targets. The lowest setting at which an object is rejected is referred to as the object's "discrimination point." Discrimination points are determined by such factors as size, shape, depth, type of metal and ground mineralization.
Typical 1212-X audio responses over 1 inch deep targets with search coil sweeping 2 to 3 inches above ground.
Note that the terms "discrimination" and "trash rejection" are used interchangeably.

1. Scatter some sample targets such as coins, pull tabs and small pieces of foil on the ground 1 to 2 feet apart.
2. Turn the TRASH REJECTION control to zero.
3. Hold the search coil about 2 inches above and parallel to the ground. Move it slowly over the samples and note the sharp loud response as you pass over each one. Keep in mind that the 1212-X is a motion detector and responds only when the search coil (or the target) is moving.
4. Increase the TRASH REJECTION control to a setting of 3 and again pass over the targets. Repeat this process at settings 4, 5, 6 and so on to 10. You will note that as you increase the level of trash rejection, the 1212-X will reject some targets and continue to respond to others. You have now determined the discrimination points for the rejected objects. For example, the small nail discrimination point may be at 4 and the pull tab discrimination at 6.
5. The 1212-X will remain silent when some objects are rejected, however, other objects may "snap, crackle and pop" as they are rejected. This is a perfectly normal response indicating that the powerful discrimination circuitry is doing its job.
6. Large pieces of trash such as beer cans or jar lids may sound like a good target no matter what

you do. With a little practice, however, you will be able to tell the difference between a large target and a small coin-sized object.

7. Figure 4 shows some different responses you may expect at different levels of discrimination. Note that as you increase the discrimination level, you progressively eliminate more targets including some good ones, such as nickels and gold rings.

NOTE:

The discriination levels shown are typical values only and may vary from detector to detector.

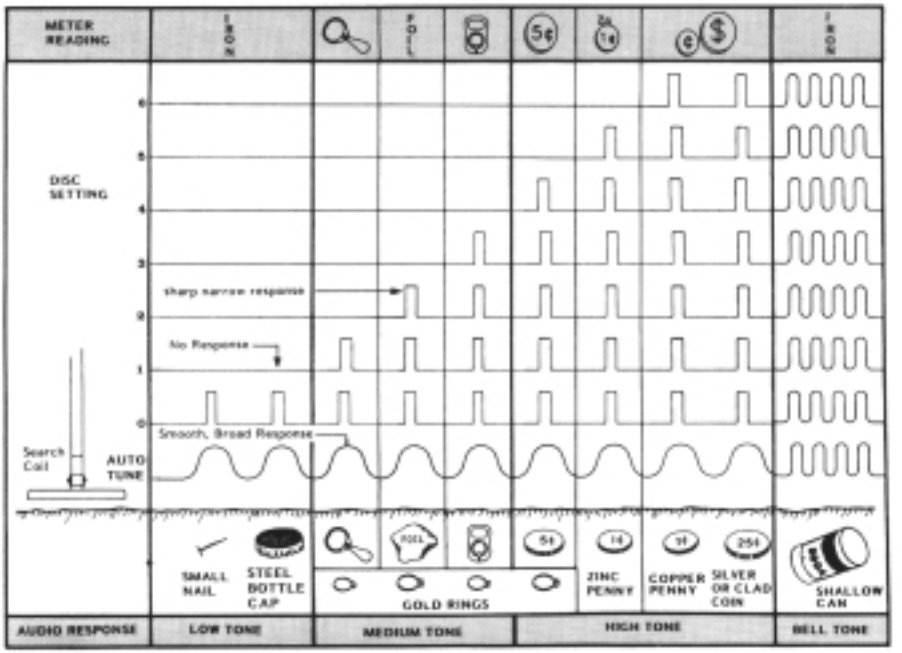

Figure 4. Typical 1212-X audio responses over 1-inch deep targets with search coil sweeping 2 to 3 inches above ground.

SEARCHING

1. Decide how much trash rejection you want to use.

a. In relatively non-trashy soil you may wish to search at zero trash rejection. In this manner, your 1212-X is at its most sensi- tive and will detect all metal targets within its range. Once an object is detected, you can increase the trash rejection level for further identification.

b. In trashy areas, it is generally easier to search at a higher level of trash rejection (at the pull tab discrimination point for example). This way you will detect mostly good targets and can lower the rejection level for pinpointing (zero trash rejection will produce the strongest signal over small or deep targets).

2. Search slowly and systematically, sweeping in a tight semicircle.

3. Keep the coil parallel to, and as close to the ground as practical. If you're hunting on a lawn, you can set the coil right on the grass and search.

4. Overlap your sweeps at least 50%.

5. Search in a methodical manner. Pay close attention to where you're going and where you've been.

6. Keep the search coil moving at a comfortable rate.

When the stem is properly adjusted, the 1212-X is balenced for sweeping in a tight semi-circle. Always overlap your sweeps at least 50%.

Figure 5. Search Pattern.

Figure 6. Keep the search coil parallel and close to the ground at all times.

NOTE:

Other motion detectors may require a fast sweep speed for maximum sensitivity. If you try that with your 1212-X, you'll actually lose sensitivity.

When the stem length is properly adjusted, the 1212-X is balanced for sweeping in a tight semicircle. Always overlap your sweeps at least 50%.

PINPOINTING

Pinpointing takes practice. The more time you spend with your 1212-X the faster and more accurate you'll become.

1. Once a buried target is indicated by the tell-tale "beep" of the 1212-X, continue moving the search coil from side-to-side across the target in a narrower and narrower search pattern.

2. When you have narrowed your search pattern as much as you can, and still hear the target, stop the search coil.

3. Now, move the coil slowly forward and then straight back to- wards you a couple of times. Stop the coil over the area where you get the loudest response.

4. Move the coil slowly side-to-side one more time, zeroing in on the loudest target response.

5. Stop the coil over the area of loudest response and rest it on the ground.

6. Your target should be below the "Hot Spot" of the search coil which is marked by a bull's- eye, slightly below the center of the coil.

7. Slowly move the coil aside, keeping your eyes on the spot where the "Hot Spot" was and quickly mark the target location with your finger or digging tool.

8. For very strong signals, you may improve your pinpointing accu- racy by adding one or more of the following steps:

a. Lift the coil until the signal is just barely heard.

b. Increase the discrimination level.

c. Rest the coil on the ground and move it back and forth very slowly.

9. For very weak signals try the following:

a. Move the coil closer to the ground.

b. Decrease the discimination level.

c. Speed up the sweep rate slightly.

10. The diagram above shows the search coil detection pattern and how it is affected by various sweep speeds, trash rejection and ground mineralization levels.

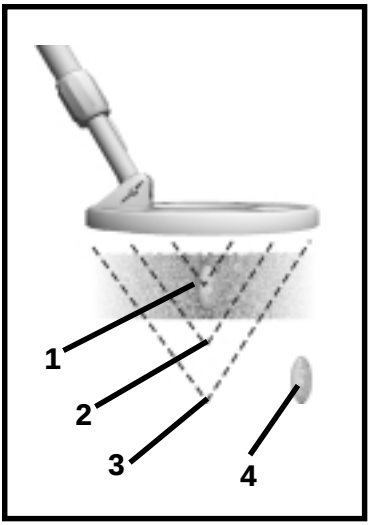

Figure 7. Search coil detection pattern and the effects of sweep, speed, trash rejection and ground mineralization.

1. MINIMUM DEPTH
a. Very slow or fast sweep speed.
b. Trash rejection set at "10."
c. Highly mineralized soil.

2. GOOD DEPTH
a. Moderate sweep speed.
b. Trash rejection set at "5."
c. Moderately mineralized soil.

3. MAXIMUM DEPTH
a. Moderate sweep speed.
b. Trash rejection set at "0."

4. MISSED TARGETS
Many targets well within the range of the 1212-X will not be detected unless you overlap your sweeps.

RECOVERY TOOLS

1. A thin, dull probe is the preferred tool for precise target location, such as heavy duty, blunt screwdriver.

2. A sturdy hunting knife with a 5 inch blade will suffice in most soils. A high quality double-edged "survival" knife is an even better (and more expensive) choice since it will be almost impossible to bend or break.

CAUTION: Using a jackknife without a locking blade is a good way to lose a finger!

3. A narrow garden trowel will work in loose or wet soil.

4. Several excellent digging tools are made just for the treasure hunter and especially designed sand scoops are available for beach combing.

TARGET RECOVERY

Once you have pinpointed a target, your objective is to recover it quickly and neatly, leaving virtually no trace of your excavation. There are almost as many ways to do this as there are Treasure Hunters. Whatever works for you is good enough as long as you don't break any laws, damage vegetation, or leave your search area looking like a World War II battlefield.

Generally speaking, beachcombers do little if any damage to the environment while recovering targets. However, if you plan to use your 1212-X on lawns or in parks, your target recovery method can be very important. Two of the most successful methods are illustrated in a separate booklet enclosed with your 1212-X. WHICHEVER TOOL OR METHOD YOU CHOOSE, REMEMBER THAT RESPONSIBLE TREASURE HUNTERS TAKE PRIDE IN THEIR ABILITY TO LEAVE SOIL AND VEGETATION INTACT AND UNDAMAGED.

OPERATING TIPS

1. We've already said it but it bears repeating: TAKE YOUR TIME AND OVERLAP YOUR SWEEPS.

2. Keep your trash rejection level set low. You'll dig more trash but you'll find more good targets, too. If you continually run at the pull tab discrimination level you'll find coins and silver rings but very few gold rings for example.

3. Use good headphones. You won't miss faint targets, you won't attract unwanted attention and you won't bother others. And you'll get longer battery life.

4. Practice pinpointing. There's nothing sacred about the methods described in this manual. Many 1212-X users have developed their own pinpointing methods.

5. Always bury a coin when working in unfamiliar territory and check it at different Trash Rejection levels. There is some sensitivity loss at higher levels of discrimination. The greater the ground mineralization, the higher the sensitivity loss. For example, you may be able to detect a penny 6 inches deep at zero discrimin- ation, but no deeper than 4 inches at the pull tab discrimination point (see Figure 7). Also, ground mineralization can reduce a detector's ability to discriminate accurately. In highly mineralized soil, some trash targets may not be rejected.

6. When in doubt about the possible identity of a target, dig it up.

7. The 1212-X is an easy detector to use but if you're having trouble with any aspect of its operation (pinpointing, searching false sig- nals, etc.) go back and reread the part of this manual relating to your problem.

FALSE SIGNALS

Due to the sensitivity of the 1212-X, you're bound to get some "false signals" once in awhile. A false signal occurs when something that shouldn't sounds like a good target. The 1212-X does a good job of rejecting junk but it can be fooled by "hot" mineralized spots in the soil, large pieces of junk, some kinds of bottle caps and pull tabs or trash less than 2 inches from the coil.

So what do you do about false signals? Well, 90 percent of them will sound suspicious to you after you've had some experience and you'll just ignore them. They may be very faint or very abrupt with static. Often when you go back over the same spot, a false signal will simply disappear. Other false signals may be very loud and sharp but most of these will also disappear if the coil is speeded up or raised slightly. Some shallow, or large or irregular pieces of junk however, will sound off no matter what you do. You may reduce the number of false signals by increasing the trash rejection level. Some other sources of false signals are:

1. ELECTRICAL INTERFERENCE: Caused by radio/TV stations, power lines, or nearby detectors operating at the same frequency.
SOLUTIONS: Move further away, reduce sweep speed.

2. HIGHLY MINERALIZED SOIL: Usually causes constant static on good target sounds. SOLUTIONS: Increase trash rejection level, raise the search coil until false signals disappear and sweep at that height.

3. WET SAND: Same as highly mineralized soil.

4. ELONGATED FERROUS OBJECTS: If you hear two beeps very close together and can't find either one, you're probably over a nail (see Figure 4) or some other long iron object. But a very shallow coin or a buried coin on edge may give the same response. In all cases, the target will be between the beeps or, if you sweep at right angles to your original direction, you'll receive a single beep directly over the target (except for the very shallow coin). One way to tell the difference between a coin and a nail is to set your trash rejection to about

5. Most small nails will be tuned out while most coins will respond with a good, smooth signal.

5. EXTREMELY TRASHY SOIL: May result in a constant chatter or "snap, crackle and pop" with assorted, hard to find "good signals." The obvious solution is to increase the trash rejection level to maximum.

6. DIGGING TOOL: If you're carrying a metal sand scoop, digging knife or screwdriver, hold it behind your back or keep it above your waist. Your 1212-X is sensitive enough (depending on how big the digging tool and how low you hold it) to sound off each time you sweep your search coil beneath it.

BATTERY REPLACEMENT

Very weak or no audio response means that it's time to change the battery. A single 9 volt transistor battery is attached to the inside of the battery panel at the rear of the control housing.

1. Remove the battery panel by pulling the Nylatch fasteners part ially out.

2. Carefully disconnect the battery connector and remove the battery. NOTE: There may be a rubber band wrapped around the battery bracket to keep the battery in place during shipment. This is not required for normal use.

3. Attach the battery connector to the new battery, insert the battery into the bracket and reinstall the battery panel on the control housing.

MAINTENANCE

Your 1212-X doesn't require a lot of care but there are a few things you should do to keep it in peak operating condition.

1. If you're not going to be using it for awhile, take the batteries out. Acid damage caused by a leaking battery can be severe.
2. Avoid extreme temperatures like those inside a closed car sitting in the sun. Even worse, inside the trunk of a car.
3. If you "scrub" the search coil on the ground, you'll eventually wear through the bottom. Replacement coils are expensive. Instead, invest in an inexpensive coil cover.
4. Put a plastic bag or Fisher's optional rain cover over the control housing if you're hunting in rain, fog or dust.
5. Keep your 1212-X dry and clean. Wipe off the lower stem before sliding it into the upper stem and keep the slip nut free of sand and dirt.

TREASURE HUNTER'S CODE OF ETHICS

LETS PRESERVE OUR TREASURED SPORT!

Laws governing the use of metal detectors are becoming more and more common. In many countries, the use of metal detectors is illegal or severely restricted. Don't let this happen in your area.

ALWAYS get permission to hunt on private property.
ALWAYS leave a site cleaner than you found it. Take at least some trash with you or, if you can, take it all.
ALWAYS fill in your holes neatly whether you're in a city park or remote wildernessness. Leave the land as it was before you disturbed it.
ALWAYS obey all laws relating to Treasure Hunting.
ALWAYS return valuable property if you can locate the original owner.
ALWAYS do whatever you can to give the hobby of Treasure Hunting the good image it needs and deserves.

Where To Use Your Metal Detector In The U.S.

National Forest and Federal Lands—Metal detecting is allowed only by special permit acquired from the federal government. Each area has a district office.

Corps of Engineers, Lakes, Shorelines and Lands—Permission has been granted only on predisturbed sites, such as beaches and attached swimming areas. New Corps lakes and lands must be okayed by the main office of the Army Corps of Engineers. Each area has a district office.

State Parks and Lands—Some state parks are open to metal detecting, but some are not. Always check with the park ranger before attempting to use your detector.

Bureau of Land Management (BLM) Lands—Some areas are open for metal detecting, and some are not. Always check with the district office.

City or County Park Lands—Most are open to metal detecting unless notice is given by a sign or city ordinance. When in doubt, always check with the city's Parks and Recreation Department.

Public School Grounds—Most are open to metal detecting unless notice is given by a sign, city ordinance, law enforcement official, or school employee. You should always check with the school office first.

Privately Owned Lands (Private Property)—Permission required. And it is always best to have the permission in writing.

Historically Marked Lands or Sites—Metal detecting is not allowed. Don't even think about it.

SPECIFICATIONS

Length	Extended	55"
Collapsed		41"
Weight		2.9 Pounds
Frequency	VLF Search	4.2 kHz Unipolar
Audio Target Response		450 Hz
Operating Modes		Search VLF All-Metal, Slow Motion
Search Coil	Type	Concentric, Co-Planar
Diameter		8"
Shielding		100% E.S.I.
Interchangeable		Yes
Waterproof		Yes
Interchangeable		No
Built-In Speaker		Yes (2-1/4")
Stereo/ Mono Headphone Jack		Yes (1/4")
Batteries		(1) 9V Transistor
Battery Life Carbon Zinc		10-15 Hours
Alkaline		25-35 Hours

Notes:

1. Subject to improvement or modification without notice.
2. Approximate.
3. Pulsegate Unipolar Audio Processing. Advanced Fisher circuitry which allows silent operation below "audio threshold tone" with no loss in sensitivity.
4. The 1212-X is a "motion" detector while in the search mode. The search coil must be moving at least slightly to detect a target.
5. Electro-Static-Insulated to eliminate certain types of false signals.
6. Use of headphones may increase battery life up to 100%.

FISHER m-SCOPE®

QUALITY

Fisher detectors are renowned for their quality.
Each detector is hand crafted in the USA with pride

PERFORMANCE

Treasure Hunters worldwide rely on Fisher.
Our detectors are durable, dependable, and search deeper..

REPUTATION

Fisher produced the first patented metal detector in 1931. For over 70 years, the Fisher logo has been a mark of excellence.

LIFETIME WARRANTY

Fisher believes in the products we produce and backs this belief with a lifetime warranty, the best in the industry, on all of our consumer detectors. Warranty may vary outside of the United States. See your dealer for details

SERVICE

Fisher is committed to providing you, our valued customer, with superior service. Each and every instrument is rigidly tested and carefully inspected during assembly and before shipment. Should you have any questions or problems, contact:

FISHER RESEARCH LABORATORY

200 West Willmott Road.,
Los Banos, California 93635
Tel 209.826.3292 Fax 209.826.0416
www.fisherlab.com email:info@fisherlab.com

EXPORT DEPARTMENT

P.O. Box 1896
New Haven, CT 06508 USA
Tel 203.288.1638 Fax 203.287.8099
email: mb@exportdept.com